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Heart Failure and Cardiomyopathies

IMPACT OF ACUTE KIDNEY INJURY DURING INITIAL TREATMENT ON WORSE CLINICAL OUTCOME IN PATIENTS WITH ACUTE HEART FAILURE

Poster Contributions
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Authors: *Yoshiya Yamamoto, Toshiyuki Nagai, Yasuo Sugano, Tatsuhiro Shibata, Yasuhide Asaumi, Takeshi Aiba, Teruo Noguchi, Kengo Kusano, Hisao Ogawa, Satoshi Yasuda, Toshihisa Anzai, National Cerebral and Cardiovascular Center, Osaka, Japan*

Background: Acute kidney injury (AKI) has been reported to be associated with worse clinical outcome in critically ill patients including heart failure. However, its prognostic significance during initial treatment for acute heart failure (AHF) remains unclear.

Methods: We examined 320 consecutive AHF patients who admitted to our institution between January 2013 and January 2014 from prospective registry. Patients who had acute coronary syndrome and without complete data-set at admission were excluded. Finally, 263 patients were divided into two groups according to the presence or absence of AKI developed within first 48 hours after admission. AKI was confirmed by AKI network criteria, and adverse events were defined as worsening HF and death within 90 days after admission.

Results: AKI was developed in 17 patients (6.4%). Patients with AKI had higher incidence of adverse events than those without (41.2% vs 11.6%, P<0.01). AKI group had higher prevalence of hypertension, higher blood urea nitrogen, serum creatinine levels and urine albumin to creatinine ratio, and lower urine osmolality than those without. There were no significant differences between the two groups in terms of age, sex, blood pressure, etiology of heart failure, cardiovascular medications, left ventricular ejection fraction, hemoglobin, plasma brain natriuretic peptide, serum troponin-T and C-reactive protein levels. In multivariate logistic regression analysis, the presence of AKI (OR 7.09, 95% CI 1.79-27.69, P<0.01), lower systolic blood pressure (OR 2.75, 95% CI 1.16-6.61, P=0.02) and higher urine beta-2 microglobulin level as a marker of tubular damage (OR 3.18, 95% CI 1.03-13.92, P=0.04) were independent determinants of adverse events within 90 days after admission, even after adjustment by existing prognostic variables including age, sex, blood pressure, hemoglobin, serum creatinine and C-reactive protein levels, urine albumin to creatinine ratio and urine osmolality on admission.

Conclusion: AKI during initial treatment might predict short-term clinical outcome in patients with AHF, suggesting the prevention of developing AKI should be considered with careful management.